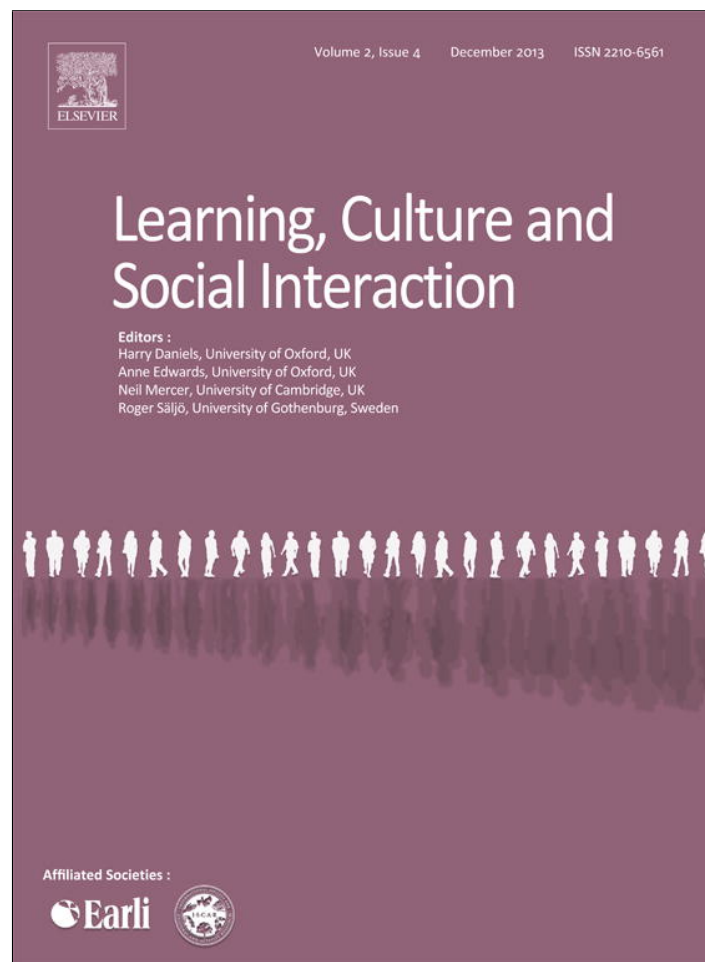


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The development of social and practical concepts in learning to teach: A synthesis and extension of Vygotsky's conception

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ABSTRACT

This conceptual paper interrogates, considers, and expands on Vygotsky's notion of concept development. I first review Vygotsky's account of concept development, including his distinction between scientific and spontaneous concepts. I next summarize his pattern of concept development from complexes to pseudoconcepts to concepts, and in the process problematize his view by shifting his discussion from biological examples to social examples. The following section examines concepts as cultural constructions, with attention to the cultural nature of concepts, and concepts and societal *telos*. The third section outlines processes that complement and enrich concept development, including concept development's future orientation, the affective dimension of concept development, and creativity's role in concept development as a higher mental function. The fourth section takes Vygotsky's notion of concept development's "twisting path" and complicates it by questioning the extent to which social concepts have a clear meaning toward which any pathway may lead given their relativistic and ideological nature. This inquiry leads to the proposal of *practical concepts* that serve as fragmented understandings that generally cohere yet are inherently compromised by attention to contradictory means of mediation in social-cultural-historical contexts.

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1. Introduction

Understanding and documenting the human capacity for thinking in concepts served as the driving force behind Vygotsky's (1934/1987) effort to develop a comprehensive cultural-historical psychology of human development. Concepts, he argued, epitomize the most advanced distillation of a culture's perspective, beliefs, and constructions, representing the mental state that provides human activity with the impetus for purposeful action while simultaneously serving as the psychological means through which action is directed. Vygotsky's (1934/1987) account outlines the fundamental processes by which people develop concepts through speech-based articulation and other forms of cultural mediation. To illustrate his points, he relies primarily on biological or otherwise stable examples in which a conceptual understanding is relatively unambiguous. The example he provides to elucidate the difference between a pseudoconcept and a concept, for instance, is the child's classification of a whale as a type of fish, before the child learns to distinguish the two.

In this paper I argue that Vygotsky's (1934/1987) tendency to illustrate his points biologically or with stable objects oversimplifies the much more ambiguous problem of arriving at a social concept. Social concepts, such as the development of a conception of effective teaching that serves as my primary area of exploration in this essay, are less amenable to the processes of clear discernment and elimination that Vygotsky describes in the development of a biological concept. A person who is developing a conception of fish, for example, would increasingly distinguish its full set of features and undertake a process of eliminating creatures whose constitution lacks those traits that are essentially Piscean. Once whales are understood to resemble fish in profile but not in

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breathing apparatus, skin composition, and hirsute capacity, they may be eliminated from the conception, even though a whale might superficially resemble the modal fish species more than many actual fish do.

Social concepts are more subjective, more constructed, more indefinite, more variously understood, more elusive in formulation, and more protean in meaning than are biological and concrete concepts. Biological concepts are, of course, subject to change as both knowledge of life forms increases and changes in the environment produce new adaptive behaviors. The [South American Classification Committee of the American Ornithologists' Union \(2012\)](#), for instance, has recently divided bar-winged cinclodes into three species, among many reclassifications of bird varieties. Such adjustments are routine among scientists. Even with reclassifications occurring regularly, biologists engaged in taxonomic differentiation tend to work with high levels of agreement regarding the degree to which plants and animals share sufficient traits to be recognized as belonging within the same categories. A social concept, however, such as “effective teaching,” relies on constructed knowledge. These disagreements often introduce vexation into disciplinary practices, such as when competing conceptions of effective teaching are available yet only one becomes codified in teacher evaluation systems ([Smagorinsky, in press](#)).

Educational concepts are socially constructed and thus are much more difficult to consider than are [Vygotsky's \(1934/1987\)](#) illustrations. Although biology teachers might agree on whether their students are dissecting a worm or a frog, they might find less consensus on whether animal dissection meets societal standards for the concept of *ethical treatment of animals*. Such problems permeate the worlds of teaching and learning. What does it mean, for instance, to be a constructivist teacher, when the whole notion of constructivism lacks agreement ([Phillips, 1995](#))? How do people know if they are approaching clarity of a concept that itself means different things to different people? How can people get beyond unfettered relativity to arrive at definitive conceptions, or at least those that are defensible on some grounds in light of competing ideologies and mental frameworks that produce different perceptions, foreground different sources of evidence, and produce different ways of ordering and constructing reality?

The difficulty in arriving at a coherent social concept ultimately leads to my proposal for *practical concepts*, those developed amidst these competing mediational forces, as in the case with learning to teach. Practical concepts are limited in their potential for cohesion because they are formed within contradictions among the belief systems and the artifactual structure of one's social surroundings. Practical concepts, I argue, might be the closest one can develop in a turbulent and interrelated social world where physical distance is often irrelevant, particularly as technology enables immediate communication across oceans, continents, and cultures. The availability of these competing ideologies and their attendant social practices for inclusion in one's conceptual world inevitably complicates any effort to act in consistently unified ways, especially as the contexts of human action continually undergo metamorphoses into new landscapes and their changing populations.

Philosopher Charles [Taylor \(1985\)](#) has stated that a “rotten compromise” (cited in [Elshtain, 2004, p. 130](#)) inevitably follows when people's thinking is immersed in contradictory epistemological conceptions, such as Romanticism and Enlightenment. I would counter that only in the rarified world of philosophy can real-world thinking that inevitably has been shaped by competing traditions be viewed as compromised, and rottenly so. In contrast, I argue that, in a complex world that allows access to multiple and often ideologically-conflictual sources of mediation, conceptual compromises are to be expected rather than lamented.

To explore these issues, I first review [Vygotsky's \(1934/1987\)](#) account of concept development. The second major section of this inquiry examines concepts as cultural constructions, with attention to the cultural nature of concepts, and concepts and societal *telos*. In the third major section I identify processes that complement and enrich concept development. The fourth major section explores [Vygotsky's \(1934/1987\)](#) notion of concept development's “twisting path,” a metaphor I complicate by questioning the extent to which social concepts have a clear meaning toward which any pathway may lead, given their relativistic and ideological nature. The final section of the paper proposes that *practical concepts*, due to continual mediation by competing structures and forms of activity, are unlikely to reach the level of purity suggested by Vygotsky given the multiple and competing directions in which one's thinking is mediated in complex social settings when undertaking practical action.

2. Vygotsky's outline of concept development

As a developmental psychologist, [Vygotsky \(1934/1987\)](#) was concerned with the ways in which people construct concepts over time, particularly through their attribution of meaning to words that they learn through cultural engagement. The concepts that people formulate through social mediation provide the primary focus for his understanding of the development of consciousness. Vygotsky's conception of concept development focuses on the manner in which children gravitate to the norms of relatively stable adult communities of practice – a possibility more likely in his early 20th century, culturally-isolated, and often parochial world than in the 21st century's globalized and interrelated social landscape – in which conceptual agreement provides the mediational context of their development. I next review the fundamental principles of his outline, first situating his attention to concepts in his larger effort to outline a comprehensive psychology of socially, culturally, and historically mediated human development, then reviewing his distinction between scientific and spontaneous concepts, and finally detailing his developmental sequence of complexes to pseudoconcepts to concepts.

2.1. Concept development and human development

Concept development begins with an infant's first exposure to human contact and the expectations that others have for a child in the greater draft of human societal activity. [Cole \(1996\)](#) describes mediational means that are woven into the fabric of a society's practices – e.g., the instruments by which different trajectories are suggested as most appropriate for people from

different familial and community backgrounds – as instances of *prolepsis*. Through this phenomenon people are subtly encouraged to take on particular dispositions, attitudes, and beliefs by means of the cultural tools and values made available in the environment. Infants, for example, are subjected from birth to socialization into expected sexual roles based on their genitalia or by the ways in which adults clothe them (Rubin, Provenzano, & Luria, 1974), and this acculturation to a gendered orientation extends through childhood through such mundane and routine artifacts as adults' selection of clothing, playthings, and bedroom wallpaper that suggest a domestic future for girls and world of action for boys (Rheingold & Cook, 1975). These mediational environments are likely to evolve as expectations for heterosexual social futures become fissured in the context of a broader acceptance of LGBT(Q) orientations as normative in many parts of mainstream society. Nonetheless, as many have noted, the persistence of proleptic influences helps to account for the fact that women are guided toward careers as teachers to a far greater extent than men are (Acker, 1994), a tendency that in turn has consequences for teacher salaries, which remain low due to the low value placed on women's work in a male-dominated society.

In schools, students' life trajectories are suggested by all manner of activity structures and implied optimal outcomes. A teacher of literature, for instance, might embrace an approach to reading based upon the principles of one type of literary criticism or another, each of which suggests to students that ascendance to the role of literary critic is the most efficacious route to literary achievement. Or, a teacher might grant to each reader a form of interpretive authority, even if that emphasis might lead away from technical decoding skills and toward such actions as personal responses, parallel storytelling, emotional connections with texts, and other reading acts that rely less on technical analysis and more on personal constructions of meaning (Smagorinsky, 2001).

Undoubtedly, the broader cultural stream sets the terms for any concept that is available within it, providing the mediational channel that in turn conditions how smaller concepts are appropriated within its value system. In other words, any social concept has an ideological dimension that is embedded in a more encompassing, governing worldview. As I will review, this cultural mediation is not fatalistic, but rather creates likelihoods that are in line with cultural practice in general. People do make conceptual refinements and breaks, often through their exposure to and engagement with competing belief systems or through novel juxtapositions of existing epistemologies. I next more specifically review how the process of concept development unfolds as described by Vygotsky (1934/1987). I then, with particular attention to social concept development, re-imagine his account in light of evidence available through studies conducted in the decades following his formulation.

2.2. Scientific and spontaneous concepts

Vygotsky (1934/1987) distinguished between what have been translated as *scientific* and *spontaneous* concepts. A scientific concept is not necessarily about science. The Russian term *naychnoe ponyatie* is more properly translated as “academic” (Wertsch, 1991, p. 39) because people learn such concepts through formal, systematic instruction. They are also, however, available through other, non-academic settings for learning such as communities of faith, apprenticeship relationships, socially organized activities under formal leadership, the workplace, and other surroundings where explicit and systematic instruction in rules, conventions, and other governing knowledge is overtly provided for learners, usually by those with greater experience in a discipline, field, activity, or community of practice.

This process of developing a scientific or academic concept involves a learner's appropriation of a set of prevailing rules that enable him or her to extract a concept's principles from its original context of learning and apply them to new situations where they provide a framework for understanding circumstances and acting on them in fitting fashion. In the sense that scientific concepts are often emphasized in academic settings, they tend to be associated with the appropriation of increasingly advanced literacy skills. The formalization of a concept in writing enables a high degree of elaboration, the fixing of ideas in textual form, the opportunity for vetting through other readers, and the potential for widespread distribution beyond the spatial and temporal bounds of its initial formulation, thus leading to higher levels of abstraction than the more localized, informal, word-of-mouth exchanges typical of spontaneous or everyday concepts.

Like most binaries, the scientific/spontaneous distinction might include elements of both. For example, service-learning activities that include both formal classroom-based discussions and local fieldwork deliberately engage the two conceptual fields (Kinloch & Smagorinsky, in press); and being tutored or apprenticed in the context of authentic work involves learning in a local setting with the availability of abstraction for new applications through the guidance of the more senior participant.

A scientific concept is not tied to the setting in which it is originally learned. Instead, it provides generalizable features that enable its appropriator to apply and adapt them to new problems in new contexts that share general properties with those to which the concept has been employed elsewhere. This potential for abstraction and reapplication often serves as the instructional focus in the formal, often academic settings in which learners engage with concepts. In such cases, the generalization itself is foregrounded, and its application to human experience serves to illustrate its principles deductively. In university pedagogical courses, for instance, a concept such as “cooperative learning” might be formally defined and illustrated with a variety of examples that enable an abstraction of those properties common to all and lacking in learning that is not cooperative.

Spontaneous concepts, in contrast, are not learned through formal understandings reached under the supervision of a teacher, coach, mentor, or other instructor. Rather, they are learned in situated, everyday practice. As a result, they are applicable primarily in contexts where the everyday circumstances and practices resemble those of the original context of learning. A beginning teacher, for instance, might be apprenticed through a Montessori experience in which students are encouraged to direct their own learning, and in subsequent placements find that this approach lacks sufficient structure to work with students who do not find school to be a motivating environment.

Vygotsky (1934/1987) emphasizes the need for the integration of spontaneous and scientific concepts in order to ensure powerful learning and developmental experiences. He argues that formal instruction in principles alone will not result in the development of a durable, useful concept. Rather, knowledge of abstracted rules must work in conjunction with experiential knowledge. Vygotsky insists that principles are of little value without application, and that applied knowledge is of limited value without broader governing rules. Service-learning opportunities, which explicitly place classroom abstractions in dialogue with worldly action, potentially integrate the two conceptual fields to satisfy Vygotsky's imperative for synthesis of the two. This interplay between formal knowledge of principles and knowledge gained through everyday activity enables people to think about problems beyond their range of experience through the creative use of their imagination, a feature of concept development I will treat later in this exploration.

2.3. Complex, pseudoconcept, concept

In Vygotsky's (1934/1987) outline, concepts are distinguished by the fact that all of the individual elements they encompass are unified by a single theme. Along the path toward concepts, people develop *complexes* and *pseudoconcepts*, both of which approximate the unity of elements found in concepts but include inconsistencies, such as thinking that whales are a type of fish. I next outline what Vygotsky (1934/1987) postulates to be a broad developmental sequence of moving from a complex to a pseudoconcept to a concept.

A *complex* lacks the unity that might be available through either scientific or spontaneous concepts. Vygotsky (1934/1987) argues that when people think in terms of complexes, “any connection is sufficient to lead to the inclusion of an element in a given complex... [T]he complex is based on heterogeneous empirical connections that frequently have nothing in common with one another” (p. 137; emphasis in original). Early in life, for instance, a child might refer to all flying objects as “birds,” including airplanes. A process of differentiation over time produces discrimination that eventually eliminates airplanes from the category of “birds.” Bats, however, might be included as live avian-like creatures until additional understandings lead to their reclassification as flying mammals. A *pseudoconcept* bridges the complex and concept developmentally. A pseudoconcept is a “shadow of the concept, one that reproduces its contours” (Vygotsky, 1934/1987, p. 144), having all of the appearances of a concept yet connecting the objects “on the basis of simple association” (p. 142). The child's ultimate distinction between birds and bats might characterize this stage of concept development.

Initial thinking in complexes and then pseudoconcepts is not simply the province of the child, however. Adults, particularly when entering new fields or activities, similarly go through a stage that typically involves working through complexes and pseudoconcepts on the way to concepts. Learning to teach involves the gradual development of pedagogical concepts, with misconceptions formed and discarded along the way. The difficulty of this task is underestimated by the bureaucrats and policymakers who typically assume that the 1–2 semesters of pedagogical coursework in universities should fully provide beginning teachers with comprehensive instructional expertise (National Council for Accreditation of Teacher Education, 2010–2012), or more remarkably, that Teach for America's “boot camp” of five weeks can provide basic instructional proficiency and classroom readiness.

If social concepts were as straightforward as biological concepts, life would be much simpler. The problem lies in developing those concepts where the target understanding – academic achievement, effective teaching, and so on – itself is socially constructed. The practical problems associated with constructing social concepts follow from the manner in which a concept must be put into action when competing understandings cloud the picture of which understanding one is developing toward. The ability to develop conceptual understandings in the social realm may have profound implications for life on earth, as suggested by the fact that the Sikh faith community has been subject to over 700 hate crimes in the U.S. following the 9-11 terrorist attacks on New York and Washington, D.C., because Sikhs' attire and appearance superficially resemble those of Muslims, the faith community of the eighteen 9-11 attackers, at least to those with little understanding of either religion. Even labeling the 9-11 hijackers as terrorists, as many have, or brave martyrs in a worthy cause, as have others, relies on a social construction of their actions. How such actions are treated in the school curriculum implies much about the ideology of the people running the institution.

Adopting a particular social pathway of concept development suggests that in developing a social conception, one also adopts an ideological trajectory toward a broad system of cultural beliefs and practices. One who gravitates toward an understanding that a whale is not a fish need not be concerned with excessive ideological baggage, unless one is interested in saving the whales but not the fish. One who considers a 9-11 hijacker to be a terrorist, however, does so within a broad political framework that views a particular societal direction to be optimal and behaviors that interrupt or clash with it to be evil and available for reprisal, assuming that the right source of offense can be properly identified and addressed. A pseudoconcept in such situations may have catastrophic consequences if, for example, the wrong enemy is invaded in retaliation.

3. Culture and concepts

I next examine concepts as cultural constructions. After providing attention to the cultural nature of concepts, I look at concept development in relation to societal *telos*, i.e., the optimal endpoint toward which human activity is directed and the manner in which this overall purpose and related practices provide the context for the thinking and actions of subgroups and individuals within a social group. I then problematize this potentially fatalistic sense of social destiny by looking at the ways in which participation in multiple communities of practice can complicate concept development and even lead to the disruption of communities when new conceptions and accompanying trajectories become available and are pursued such that the community of origin is left behind.

3.1. The cultural nature of concepts

Concepts are fundamentally cultural as part of the frameworks for thinking that people appropriate through their social experiences. Socialization to a worldview serves a formative purpose that leads people to accept how others construct them, which in turn implies a channel for worldly action and status in society. This orientation does not necessarily benefit those who appropriate cultural concepts, as Clark and Clark (1939) found in their study of Black children's tendency to prefer White dolls to Black dolls during the period of legally codified U.S. Southern racial segregation in the 20th century, suggesting their appropriation of the relentless message imposed by the dominant culture that White people themselves are inherently superior to Black people.

One's conceptions are thus not individual constructions, but culturally mediated constructions that affect one's sense of place in the world and how one navigates life's journey. Although social concepts are much easier to illustrate as constructed, even the most seemingly concrete of scientific facts is open to conceptual interpretation. I can, for example, point to a naturally formed aggregate of mineral matter in my yard, and most people I know would agree that it is a rock. And yet subjective idealists informed by the Irish theologian George Berkeley would assert that there is no such thing as physical matter; and indigenous people from outside the Enlightenment tradition might take the animistic view that the rock is not inert but instead has a living spirit (Jacobs, 1998). The manner in which even a rock may be subjected to different conceptualizations is relevant to the ways in which beginning teachers may view a discipline that is populated by people of widely ranging perspectives, experiences, dispositions, and values, or the ways in which they may view student subpopulations to which their primary exposure prior to teaching has been negative media images through which the youth themselves are socialized to view themselves (Ward, 2004).

3.2. Concepts and societal telos

To Vygotsky (1934/1987), word meaning distills one's conceptual understanding. Through the meanings that they attribute to words, people reveal the degrees of abstraction that they have achieved in their thinking, and the particular framework that has produced that abstraction. To become a member of a community with normative ways of acting and being understood – even if one's goal is to disrupt those norms – a learner needs to come to the same understanding for words that others in the society have for them. Others (e.g., Wertsch, 1991) have expanded Vygotsky's emphasis on words to include any sign system that enables communication as part of a cultural tool kit of mediational means. Any cultural tool or sign thus embodies not only the societal vision of individual who uses it, but the historical social practices through which the tool has come into being and become understood over time.

The development of concepts thus involves the appropriation of those cultural practices that represent a community's perspective through the predominant sign-and-tool systems through which it develops and expresses meaning. The culture itself in turn evolves in relation to the ways in which that perspective is adapted to new conditions and problems by its members. Although complex societies such as the United States include people of diverse perspectives, on the whole a culture has a sense of optimal destination toward which activity and thinking are channeled. Wertsch (2000) has termed this phenomenon *telos*, drawing on the Greek term that refers to the end or outcome of a goal-oriented process. Achieving a whole teleological sense of purpose for a nation can be difficult, if not impossible. At the same time, without a generally common sense of purpose and outcome, a society would have trouble functioning with any degree of continuity or cohesion, from determining how automobile drivers negotiate traffic intersections to settling on which procedures best produce a fair and valid political process.

This meaning is not constructed through isolated noetic activity. Rather, learning how to think is a fundamentally social process (Vygotsky, 1934/1987). Thus, through their engagement with other people, children appropriate meanings that have achieved some degree of cultural stability, even if cultures might view one another's values hierarchically, as Europeans did when engaging with aboriginal people in their quest for a "New World." When I was a U.S. schoolboy, I learned that these Europeans were "explorers" and "settlers" who had to beat back the hostile and threatening indigenous "savages" whom they encountered while seeking a new and better life in the virgin wilderness they had "discovered" en route to seeking better oceanic trade routes. The American Indian Movement (AIM) aggressively contested these terms and their accompanying concepts of virtuous explorers fending off native brutes on a pristine continent to which they could lay claim as the first people to discover it, in turn constructing the Europeans as invaders and cheats and indigenous people as noble protectors of an ancient culture and its natural environment (cf. Four Arrows, 2006, 2013). The representation of North America as a continent inhabited by hostile savages before their rightful subjugation by brave pioneers persists to this day (e.g., Hutchinson, 2013).

When educators instruct learners in formal concepts, then, they are not just teaching an idea. They are asserting an ideology. A culture's interpreters may thus provide a veneer to its history that masks cruel and predatory practices that history might judge unfavorably, even as it justifies those practices according to immediate contingencies (Loewen, 1996) or reconstructs past history to preserve a society's positive view of itself (see, e.g., Southern U. S. history teacher Huckaby's (2013) defense of the Civil War Confederacy as composed of brave soldiers who justifiably "went off to fight for the South and what [they] perceived to be an invasion by a foreign army and an all-out assault on [their] liberty and [their] way of life."). The moral question of whether a culture is moving in the "right" direction or is making "progress" is highly subjective, like the relativity that follows from allowing for multiple perspectives in seeking causal explanations for worldly events. Yet the moral question matters, depending on what one understands morality to mean and what its implications are during conflicts with other cultures (Smagorinsky & Taxel, 2005).

4. Processes that complement and enrich concept development

In this section I look to areas in Vygotsky's writing where he addressed issues that do not arise in his primary attention to concept development in *Thinking and Speech* (Vygotsky, 1934/1987). Here I attend to processes that complement and enrich concept development, including concept development's future orientation, the affective dimension of concept development, and creativity's role in concept development as a higher mental function.

4.1. Concepts and future action

Concepts enhance people's ability to anticipate how future action will unfold under circumstances that share enough traits with the contexts of learning to find application in newly developing situations (Smagorinsky, 2011). A generalization that is structured with formal principles and grounded in extensive worldly experience enables one to infer what will happen next, assuming that one has sufficient information about the present and how it has come into being. In very isolated communities that rely primarily on everyday concepts – such as the remote communities in rural Kazakhstan studied by Luria (1976) in a project he planned with Vygotsky – formal principles might not be necessary, in that for the most part everyday life proceeds in ways well-anticipated by those with local knowledge, as long as no sudden changes in circumstances arise. It is perhaps significant that Vygotsky (1934/1987) developed his theory of concept development in a world where geographically and socially isolated cultures were quite common, which made the availability of only spontaneous concepts more likely. In contrast, the connected world of the 21st century potentially makes localized knowledge more amenable to external influence and reshaping.

My assertion that concepts can help one anticipate the future is *not* to say that concepts enable one to *predict* the future successfully. Rather, they enable a grasp of how things work such that one's anticipation is well-grounded in an understanding of the general manner in which social and natural processes unfold. A concept is not simply a generalization, but one that is moved into action by an ideology or theory about how its principles function in relation to natural or social processes (Barrett, Abdi, Murphy, & Gallagher, 1993). Concepts are thus more than taxonomic structures. They serve as the basis for the planning of rule-governed, culturally-channeled action in relation to the environment and all that it presents.

Nobel Laureate in Physics Niels Bohr has cautioned that “Prediction is very difficult, especially if it's about the future.” The actions of people are difficult to anticipate because people have volition, which makes any social forecast capricious, as the vicissitudes of economic forecasting reveal. Nonetheless, a conception of particular forms of culturally-mediated social action can enable an anticipation of how human events will turn out. In my studies of beginning teachers (e.g., Smagorinsky, Wilson, & Moore, 2011), those with limited conceptions of teaching and learning tend to engage in trial-and-error instruction. However, teachers who rely on trial-and-error planning have a tenuous understanding ahead of time about how their plans will work in practice, as might be common among any cohort of novices in any endeavour. Nonetheless, beginning teachers who can articulate the purposes behind their decisions based on a synthesis of formal and practical knowledge have better anticipated how their classes will unfold than those who rely on trial-and-error. The degree to which conceptually motivated practices might enable a reasonable forecast of outcomes in a radically different setting would depend on the sturdiness of the concept in both its abstracted principles and its empirical validation under a variety of conditions.

4.2. The affective dimension of concept development

Vygotsky (1934/1987) does not separate the mind as a disembodied conscious entity, but rather integrates consciousness with other bodily processes and the social, cultural, and historical practices through which people learn how to think paradigmatically. Concepts enable one to formulate an anticipation of how the future will unfold and thus can help to enable feelings of order, security, and a state of deep-seated contentedness and satisfaction with one's place in the world. The more widely verified a concept is in relation to its principles, the more adaptable it is to new settings and situations. This repurposing should produce fewer disruptive surprises and greater stability in navigating the environment, leading to a feeling of security. The more complex and subject to ideological interpretation a social concept is, the more difficult it is to apply in these new settings and situations. Social concepts thus become difficult to apply in new situations because they increasingly run into counter-definitions and resistance by those who have appropriated different understandings from either other local settings or other epistemologies.

Surprises and detours are not necessarily unhappy occasions, for serendipitous epiphanies often produce disruptions that delight. Although a teacher surely finds stimulation in surprising classroom events that produce insights, in my studies of novice teachers, most of the surprises were related to classroom events that were neither anticipated nor welcome, and at times produced longer-term discouragement with the whole prospect of teaching as a career, or with a particular school's prospects for hosting a satisfying teaching life.

The affective dimension of Vygotsky's view of human development gets less attention than other aspects of his theory, yet was present from the very first study he undertook, which was the dissertation he began at age 19 on the psychology of art as manifested primarily in literary works (Vygotsky, 1925/1971) and taken up in other papers he produced during his short career (Vygotsky, 1931/1984, 1932/1960, 1932/1987, 1933/1999). The role of affect in conceptualizing a problem is well illustrated in a study of a high school student writer interpreting Shakespeare's *Much Ado About Nothing* (Smagorinsky, Daigle, O'Donnell-Allen, & Bynum, 2010) in which the student's positive sense of herself as a writer enabled her to overcome obstacles during her composition of an analytic essay in which she attempted to interpret Shakespeare's labyrinthian plot. As a student who had experienced great success over the course of her education, she exhibited confidence that, in spite of her great difficulties both

interpreting the drama and writing her essay, she would produce a satisfactory product eventually based on her conceptual understanding of the genre of interpretive writing and belief in her ability to produce an appropriate composition. This positive sense of outcome illustrates her anticipation of the future, in spite of difficulty, such that she had confidence that she would ultimately complete the task. Her affective disposition of confidence as a writer enabled her to produce an essay that contributed both to immediate feelings of satisfaction with the essay and her engagement with the play and to her overall feeling of confidence as a writer and student.

Affect thus is concerned with concept development in reciprocal ways. One's affective experiences can contribute to the manner in which practices are put into play in new settings and enable one to develop a concept. These new experiences in turn may help to construct, adapt, and modify one's emotional framework for taking on yet new tasks, thus setting the stage for productive engagement with conceptual problems. Not all learners have positive frameworks to enable persistence in new situations. Meta-experience – how one experiences one's experiences – can thus frame new situations for better or worse. A young child who is surrounded by ferociously barking dogs may harbor a lifelong fear of canines; and young writers whose papers are returned by their teachers with hypercorrection may undertake a lasting avoidance of writing. All of these examples, great and small, serve to illustrate the ways in which a conceptualization has an emotional dimension, particularly in social concepts.

4.3. Creativity in concept formation

When people think of creativity, they tend to summon to mind the lone artistic genius inspired by a personal muse to which common people lack access. Yet Smolucha (1992) argues that the culturally-mediated nature of creativity reveals how “any individual creative ‘genius’ is actually building on the collective labor of other people throughout history” (p. 53). Furthermore, Scribner (1986/1988/1997) finds from her study of factory work that creative adaptations are central processes in mundane, routine activity. Creative thinking liberates one from the concrete in ways that serve real purposes. In that it plays such a central role in everyday cognition, creativity serves as one of the *higher mental functions* that Vygotsky (1934/1987) found characterize thinking in accordance with cultural concepts, a form of mentation that he distinguished from *lower mental functions*.

Lower functions include those that follow from unmediated biological processes that are largely hereditary. Higher mental functions develop through social interaction and thus give particular cultural shape to concepts. These interactions may be of the formal sort that leads to scientific concepts, or of the everyday sort that contributes to the development of spontaneous concepts (Gajdamaschko, 1999). To Vygotsky (1934/1987), creativity serves among the higher mental processes that enable neurological and mental functions of the lower order to take on a particular character, channeled by cultural practice into specific frameworks for thinking. Creativity has a mediated structure in that it is appropriated through the use of cultural tools, rather than being an inborn, biological capacity, which is the province of imagination. This characteristic enables creativity to serve as a higher mental function, with imagination – the lower mental function – enabling its activation.

Gajdamaschko (1999) situates creativity in Vygotsky's approach to human development as a whole. In what might seem paradoxical, creativity increases with age. Many assume that children's apparent immersion in creative engagement with the world through fantasy play demonstrates that they live more elaborate imaginative lives than do adults. Gajdamaschko argues, in contrast, that because one's experiences with the world increase with age, and because imaginative acts of creativity are reliant on prior images, children's ability to conjure images is relatively limited. The aggregate of experience with age provides increasing material upon which to produce richer conceptions and creative possibilities, suggesting that adults are capable of more robust creative action than are children.

This creative action is not evident to outsiders, however, as it is with children and their creative projections, which they are prone to conduct publicly. Rather, creative imagaic generation occurs intramentally as people generate possibilities in relation to what is sensorily evident to them. Adult creative acts, including those of people learning to teach, are thus less the exclusive province of the inspired solitary genius, and more a part of creative adaptations in mundane social practice. Creativity contributes to human development of cultural concepts as part of a long-term process of maturation and building of experience, as suggested by Vygotsky's (1931/1984) assertion that “*the imagination of the adolescent essentially changes and is reconstructed on a new basis under the influence of thinking in concepts*” (p. 215; cited in Smolucha, p. 60; emphasis in original).

People thus use creativity to generate possibilities within constraints for future action, relying on mental images to project what they might do next both conceptually and practically. Without a sense of how things work and how this understanding assists with the anticipation of future events through the projection of images, one is left with trial and error. The ability to anticipate future outcomes enables imaginative projections that are consistent with conceptual structures to plan and carry out teaching plans with confidence; and a reflective disposition and set of practices may in turn consider the actual outcomes and reformulate the emerging concept in light of them.

5. Concept development's contorted pathway

Next I take Vygotsky's notion of concept development's “twisting path” and complicate it further by questioning the extent to which social concepts have a clear meaning toward which any pathway may lead, given their relativistic and ideological nature.

5.1. Concept development's twisting path

Vygotsky (1934/1987) asserts that concept development follows a “twisting” rather than linear or direct path (p. 156). To Vygotsky, although a relatively stable conception is ultimately available, one does not straightforwardly move from complex to pseudoconcept to concept. Rather, one proceeds haltingly through a series of complexes and pseudoconcepts, at times returning to a prior place on the pathway following trips down dead-end avenues and other mediational detours (cf. Smagorinsky, Cook, & Johnson, 2003).

These mediated shifts of direction are often in such conflict with one another that even the notion of a twisting path that has a clear destination becomes questionable (Smagorinsky, Rhym, & Moore, 2013). Learning to teach provides abundant examples of this problem in concept development because of the well-documented finding that a *two-worlds pitfall* provides uncertain ground on which to build a conception. The two worlds described by Feiman-Nemser and Buchmann (1985) are the university program and the school, one of which tends to emphasize progressive, constructivist pedagogies and the other of which tends to rely on authoritarian structures and practices.

In studying beginning teachers, I have found a host of other worlds that introduce additional potential exemplars and influences, many of which have been described in other research on learning to teach:

- First-order mediational experiences, such as one's apprenticeship of observation (Lortie, 1975) that produces influences from one's experiences as a student, both in terms of exemplars and antitheses; peer pressure from colleagues to conduct classes in particular and at times conflicting ways; administrative pressure to teach and conduct oneself in particular ways that may be contested by other sources of social pressure; mandates that impose a curriculum, a teaching script, an assessment, and other requirements on teachers that standardize their instruction so that all students are exposed to identical material in identical ways; in-service education that may promote a variety of practices and beliefs, often stressing competing value systems and approaches; and the school schedule, such as block scheduling, that constrains and enables particular practices, or in some cases, simply makes some practices last longer or occur irregularly.
- Second-order mediational experiences, such as images of teachers from film, television, and online media that tend to depict great teaching as the work of rogue, *sui generis* firebrands and the great mass of teachers as dull-witted, impuissant drones; and readings – from professional literature to blogs and their legions of anonymous commenters – with conflicting recommendations for what to emphasize in teaching (discipline, content, process, curricular integration, relationships, and much more) and how to promote them (enforcing discipline through a rule structure and punitive set of consequences, encouraging discipline by making class interesting).
- Dispositions, such as conceptions of students' “character” and how best to align it with social expectations (through impressing a “trait of the week” via announcements, through inductively exploring behaviors to inquire into what constitutes good character), accompanied by beliefs such as the view that good character produces obedience and thus good character is prerequisite to developing those behaviors appropriate for good study habits – in contrast with conceptions of character that make informed and conscientious dissent an admirable trait when authority serves its constituents poorly; and one's reliance on faith-based or secular orientations to the world, including those that motivate teaching, that might position teaching as a calling, a duty, an income, a service, a gift, a babysitting job, a blue collar occupation, or other perspective that would have consequences for instructional decisions and relationships with students.

These conflictual settings and practices make it difficult to identify a clear teleological destination, or to map a passageway toward it. This murky sense of purpose or pathway is endemic to complex social problems and produces the conundrum I explore in this paper: Coming to a clear conception of a biological phenomenon, such as what a fish is, and coming to a clear conception of what a social phenomenon, such as understanding and putting into practice what “good teaching” is, are tasks of different degrees of stability. Teachers are continually under pressure to be regarded as “good,” and perhaps “great”; and yet what constitutes effective teaching depends on whom one asks and how it is measured. Arriving at a consistent, durable conception of effective teaching in the midst of multiple, conflicting means of mediation thus might involve something more than a twisting path alternating between two competing sources of influence.

5.2. Relativism, ideology, and social concepts

Tulviste (1991) has argued that, from a cultural–historical perspective emerging from Vygotsky, people develop frameworks for thinking by means of their engagement with the problems that occur in their environments. Without some formal abstraction of principles for framing and solving new problems, particularly in new types of settings, these frameworks might serve local purposes only, in the form of spontaneous concepts. This postulation implies that human cognition lacks universal features, suggesting that conceptions are relativistic and ideological, in spite of claims in the Enlightenment tradition on behalf of universals. Tulviste's (1991) heterogeneity principle assumes that because people live amidst competing ideologies and perspectives and appropriate them concurrently, people may simultaneously hold seemingly contradictory beliefs. Tulviste formulated this perspective before the widespread availability of the Internet, which has expanded exponentially people's exposure to multiple conceptions of the world and various versions of each conception.

The manner in which educators are exposed to ideas and trends from various and competing influences suggests that if anything, as one matures as a teacher, more possibilities enter into one's teaching repertoire, not all of which are conceptually unified. This abundant experiential material enables the generation of a host of possible images upon which to base creative

action for the immediate contingencies that arise during the course of teaching. Teaching experiences also contribute to the affective framework through which these creative acts are filtered, which may predispose the teacher in particular directions in relation to specific populations of students. This expanded repertoire undoubtedly enables a wider range of solution paths, yet just as certainly complicates the degree to which they will all be conceptually unified in the manner envisioned by Vygotsky (1934/1987).

6. The social complexion of practical concepts

The inquiry in which I have engaged leads to the proposal of *practical concepts* that, due to continual mediation by competing conceptions in the environment, may never reach the level of purity suggested by Vygotsky. In offering this possibility, I am not saying that people lack volition in making choices regarding which environmental factors are salient to the ways in which their thinking evolves. Rather, I am saying that people do not develop social concepts in isolation, but instead through engagement with others; that environmental pressures are real and have consequences for one's social and financial standing; that conflicting ideas may make sense in different ways at the same time, as Tulviste's (1991) heterogeneity principle asserts; that people experiencing concept development are in the process of formulating a useful perspective rather than having formed one already and thus are amenable to pressure, influence, and mediation in exploring conceptual possibilities as part of the process of seeking understanding; and that environments tend to have overriding values and attendant social purposes that suggest predominant conceptions and accompanying practices that one might be pressured to adopt even if one's volition suggests other approaches (Smagorinsky, Lakly, & Johnson, 2002).

Practical concepts call to mind Bettelheim's (1987) postulation of the *good enough parent*. To Bettelheim, the demands of parenthood in an increasingly fragmented and unpredictable world are sufficiently prodigious that being a great parent exceeds human capability. Most parenting, he argues, is a new experience to the parent, even those raising more than one child. A parent is nonetheless expected to become proficient at a task with which he or she has little experience, if any, and whose terrain is under continual change into even newer forms with unexpected challenges, as the environment itself morphs into new structures and as the children themselves continually mature into new behaviors and attitudes that render one's current state of knowledge obsolete. The best a parent can expect to become is good enough to manage child-rearing in reasonably effective ways. Practical concepts might, in this sense, serve as *good enough concepts* that are functional, even if flawed in terms of Vygotsky's (1934/1987) notion of the pure and consistent concept. In contrast, practical concepts reflect the broader social dissensus in which concept development takes place and the difficulty of finding a clear pathway amidst the ideological cacophony.

To Scribner (1984/1997b), "skilled practical thinking is goal-directed and varies adaptively with the changing properties of problems and changing conditions in the task environment" (p. 363). She contrasts this adaptive thinking with what she terms *algorithmic* thinking that produces a single pathway for problem-solving regardless of contextual contingencies, particularly those that are new or unexpected. Whatever expertise and knowledge one has to inform how to act next is thus under continual adjustment, a phenomenon that suggests that concepts are under continual reformulation as well in light of emergent conditions.

Scribner (1984/1997a) acknowledges the availability general problem-solving skills, yet argues that new skills needed to be adapted to the tasks expected of them on the job, thus suggesting something more complex than the *conditional knowledge* that cognitive psychologists (e.g., Paris, Lipson, & Wixson, 1983) argue enables the proper application of prior knowledge in light of what needs to be done. That is, simply having prior knowledge of content and process, and knowing when to bring it to bear in given circumstances, does not account for creative adaptations that are necessary when spontaneous decisions and actions are required in the face of developing and unforeseen problems. Those who proposed the construct of conditional knowledge were reading researchers. Adjusting reading strategies to texts, however, is simpler than adjusting knowledge to social conditions that are themselves in flux, making conditional knowledge of working amidst teeming populations less reliably available than are conditional reading strategies.

In teacher education professors often wonder why their students struggle so mightily to apply progressive pedagogical principles in school classrooms whose authoritarian structures run deep to the bone (Grossman, Smagorinsky, & Valencia, 1999). This perspective is further complicated in that the pedagogical tools themselves might not have a consistent definition across sites, such that the aspiring "whole language" elementary teacher might find the approach defined differently in different university courses and then again by a mentor teacher in a school classroom, and be actively discouraged from practicing any of its tenets by a mentor teacher or school administration focused on other values and practices (Smagorinsky, Cook, Jackson, Moore, & Fry, 2004). These examples illustrate the ways in which concepts can serve as moving targets toward which to direct thinking and acting. Practical concepts are open to conflict because they must maintain some balance among competing means of mediation. They are both everyday and abstract, but driven by pragmatic needs that often require a problem-solving hierarchy (Smagorinsky, Zoss, & Reed, 2006) to determine priorities and sequences of decisions. One's imagination allows for multiple images to be projected at once in accordance with the expectations afforded by different conceptions, and affect contributes to the ways in which the images become available and how they imply which future actions will be taken toward which conceptual understanding.

This adjustment of Vygotsky's (1934/1987) notion of concept development suggests the need to reconsider his valorization of the scientific concept as the epitome of human development, and of academic preparation as the key to intellectual socialization. The work of Scribner (1984/1997a) reveals concept development to be a constant process in adult work, informed and abetted by creative adaptation and affective framing and response. This democratic approach to concept development suggests that school,

while a key developmental setting for young people, has no elevated status in promoting concepts, but rather serves as one setting among many on the chronological and ideological continua of mediational influences on how people learn to think.

Time passes, people mature, contexts change, new settings mediate understandings, experiences accrue, possibilities multiply, and conceptual pathways become more and less available. How one gets a sense of moving forward when the direction is uncertain, the pathways lead in different directions, the rewards and punishments suggest that some conceptions are better than others while other values suggest they are not, is a function of a person's disposition but not entirely under the control of the individual. As a result, the good enough concept, the inconsistent yet practical concept, enables one to make good enough progress toward cognitive and social destinations that are, by definition, amorphous and protean.

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